

# Notice of Allowability

Application No.

10/689,361

Examiner

Faye Polyzos

Applicant(s)

SRIVASTAVA ET AL.

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 17 October 2003.
2. ☒ The allowed claim(s) is/are 1-38.
3. ☒ The drawings filed on 09 February 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 2/9/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

**EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE*****Allowable Subject Matter***

1. The following is an examiner's statement of reasons for allowance:

Regarding independent claim 1, the prior art does not disclose or fairly suggest a scintillator composition comprising of at least two solid solution of lanthanide halides or wherein the lanthanum halide solution lanthanum iodide is substantially free of lanthanum oxyiodide.

The examiner notes that while it is known in the art of scintillator composition comprising a solid solution of a lanthanide halide (see for example E.V.D van Loef et al – "High-Energy-Resolution Scintillator:  $\text{Ce}^{3+}$  Activated  $\text{LaBr}_3$ " – pg. 9 and col. 2) and an activator for the matrix material comprising element praseodymium (see for example Lynch et al – US 5,882,547 A – col. 3, lines 10-12), the prior art does not fairly suggest of a halide-lanthanide matrix material selected from a group consisting of a solid solution of at least two lanthanide halides or solid solution lanthanum iodide being substantially free of lanthanum oxyiodide.

Regarding independent claim 20, the prior art does not disclose or fairly suggest a cerium-doped scintillator composition comprising a mixture of at least two lanthanide halides.

The examiner notes that while it is known in the art of a scintillator composition comprising of one lanthanide halide (e.g.  $\text{LaBr}_3$ ) doped with  $\text{Ce}^{3+}$  (see for example E.V.D van Loef et al – "High-Energy-Resolution Scintillator:

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Ce<sup>3+</sup> Activated LaBr<sub>3</sub>" – pg. 9), the prior art does not fairly suggest of a cerium-doped scintillator comprising a mixture of two or more lanthanide.

Regarding independent claim 22, the prior art does not disclose or fairly suggest a cerium-doped scintillator composition lanthanum iodide free of lanthanum oxyiodide.

The examiner notes that while it is known in the art of a scintillator composition comprising of one lanthanide halide (e.g. LaBr<sub>3</sub>) doped with Ce<sup>3+</sup> (see for example E.V.D van Loef et al – "High-Energy-Resolution Scintillator: Ce<sup>3+</sup> Activated LaBr<sub>3</sub>" – pg. 9), the prior art does not fairly suggest of a cerium-doped scintillator comprising a substantially free lanthanum oxyiodide lanthanum iodide.

Regarding independent claim 24, the prior art does not disclose or fairly suggest a radiation detector for detecting high-energy radiation comprising a solid solution of at least two lanthanide halides or wherein the lanthanum halide solution lanthanum iodide is substantially free of lanthanum oxyiodide.

The examiner notes that while it is known in the art of scintillator composition comprising a solid solution of a lanthanide halide (see for example E.V.D van Loef et al – "High-Energy-Resolution Scintillator: Ce<sup>3+</sup> Activated LaBr<sub>3</sub>" – pg. 9 and col. 2) and an activator for the matrix material comprising element praseodymium (see for example Lynch et al – US 5,882,547 A – col. 3, lines 10-12); the prior art does not fairly suggest of a halide-lanthanide matrix material selected from a group consisting of a solid solution of at least two lanthanide

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halides or solid solution lanthanum iodide being substantially free of lanthanum oxyiodide.

Regarding independent claim 34, the prior art does not disclose or fairly suggest a method for detecting high-energy radiation with a scintillation detector comprising a solid solution of at least two lanthanide halides or wherein the lanthanum halide solution lanthanum iodide is substantially free of lanthanum oxyiodide.

The examiner notes that while it is known in the art of a high-energy scintillation detector comprising a solid solution of a lanthanide halide (see for example E.V.D van Loef et al – “High-Energy-Resolution Scintillator:  $\text{Ce}^{3+}$  Activated  $\text{LaBr}_3$ ” – pg. 9 and col. 2), an activator for the matrix material comprising element praseodymium (see for example Lynch et al – US 5,882,547 A – col. 3, lines 10-12), a method of receiving radiation by an activated halide-lanthanide based scintillator crystal so as to produce photons and detecting photons with a photon detector coupled to the scintillator crystal (see for example McClellan et al – US 6,323,489 B1 – col. 4, lines 42-55), the prior art does not fairly suggest of a halide-lanthanide matrix material selected from a group consisting of a solid solution of two or more lanthanide halides or of a solid solution lanthanum iodide being substantially free of lanthanum oxyiodide.

Regarding independent claim 35, the prior art does not disclose or fairly suggest a method for producing an activated halide-lanthanide-based scintillator crystal comprising a solid solution of at least two lanthanide halides or wherein

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the lanthanum halide solution lanthanum iodide is substantially free of lanthanum oxyiodide.

The examiner notes that while it is known in the art of a method to produce an activated, halide-lanthanide-based scintillator crystal by melting the reactants at a temperature sufficient to form a molten composition and crystallizing a crystal from the molten composition (see for example Pauwels et al – US 6,437,336 B1 – Abstract) and a scintillator composition comprising a solid solution of a lanthanide halide (see for example E.V.D van Loef et al – “High-Energy-Resolution Scintillator:  $\text{Ce}^{3+}$  Activated  $\text{LaBr}_3$ ” – pg. 9 and col. 2) and an activator for the matrix material comprising element praseodymium (see for example Lynch et al – US 5,882,547 A – col. 3, lines 10-12), the prior art does not fairly suggest of a halide-lanthanide matrix material selected from a group consisting of a solid solution of two or more lanthanide halides or of a solid solution lanthanum iodide being substantially free of lanthanum oxyiodide.

The remaining claims are allowable based on their dependency.

2. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

### **Conclusion**

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Faye Polyzos whose telephone number is 571-272-2447. The examiner can normally be reached on Monday thru Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FP

  
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